

# MECHANIC STUDY GUIDE

## Engine Repair

### Automobile and Light Truck Repair

Listed below are a number of items and subjects which make up the mechanic certification test identified above. An individual's ability to pass the certification test will depend upon the amount of knowledge the person has concerning these items. **NOTE:** There could be up to 5 additional pre-test questions. These questions will not count but may be used on a later version of the test. Your answers to these pre-test questions will not affect your score. Since you won't know which they are, you should answer all questions.

#### **Engine Block Diagnosis & Repair - 12%**

Using a bore gauge  
Honing a newly bored cylinder  
Engine bore diagnosis  
Installing pistons in block  
Cleaning and assembling

#### **Cylinder Head/Valve Train Diagnosis & Repair - 21%**

Intake valve deposits  
Valve tappet clearance  
Valve timing understanding  
Valve tappet adjustment  
Valve guide wear  
Valve refacing  
Valve spring diagnosis  
Noisy lifter diagnosis  
Valve seats

#### **General Engine Diagnosis - 19%**

Oil consumption  
.001" cylinder leakage test  
Compression test  
Sludge in crankcase  
Vacuum testing  
Low oil pressure  
Crankcase blow-by diagnosis  
Spark plug diagnosis

#### **Piston Diagnosis & Repair - 10%**

Piston design  
Ring groove diagnosis  
Piston ring diagnosis

#### **Crankshaft & Camshaft Diagnosis & Repair - 15%**

Crankshaft end-play  
Journal taper diagnosis  
Installing cam bearings  
Camshaft diagnosis  
Crankshaft diagnosis

#### **Miscellaneous - 23%**

Understanding measurements to Engine  
Assembling procedures  
Diagnosing coolant bubbling  
Micrometer reading  
Bolt head markings  
Engine break-in  
Water pump diagnosis  
Turbocharger diagnosis  
Engine R&R procedures  
Basic carburetor diagnosis  
Vibration/misfire diagnosis  
Plastigage use

#### **SAMPLE QUESTION:**

A transverse mounted engine with front wheel drive must be removed from the car. All of the following are generally recommended **EXCEPT:**

- A. Removing the engine and transaxle as a unit.
- B. Disconnecting the speedometer cable.
- C. Disconnecting the half-shafts.
- D. Removing the differential gears.

**ANSWER: D**